



Introduction

U a , t e e e e d e a c c d t e a c , a e P e e c a t a , c e e e f b a e a a d c d [1]. e e d e a e c a a f a c e a e d a e a e a a d e e e e f a c a e d e a . [2]. H e e e e d d e a e a c c t a c a f o e a c a t e e a d e f e a d t t a e . [3]. e e e e e d d e e f o e a c a d t a c a e e e e e e c a t a a a c a e d b a a f c a d a c a d e a e (CVD) a d c e e b a c a d e a e [3]. N a d e e a e e e e d a e 20 e e f e a . D e e e e e e f e t a e e e d , c e a c t a c a e e e e c a t a c a b e e a e d e e a . [4]. P e e c a t a d c e d a e a c t a c a c d e c e a e a e a c a d a c a , M e a b c , c e e b a c a d e a e a e a e a . [5]. P e e c a t a d c e d e a a c t a c a c d e e c d a a e c o e e d e e , c e a e e f f e a e e c , t a c e a a b t , e o a d e e d e , b c t a d c - a c e - e d a e d e e a d e e a e f a - a e c f a c a d e a d a a e c b a a c e , e e d a e d e a e a e d , a a e e e e a d e d e a c e d f c . [7]. P e a e a e t e e e e e e e e e e e a d [T a b e 1].

2. I a a a a d a a a t e d b a a c e
3. F d e e e e a e , a e , d e b e a , b a a a , d e d f e , a c , b c c d b e c d e d e .

Magnesium

1. I a a a t e M d , e a , b e e a , d a .
2. I a a a a b d e e e e e e e e e e a d e e f c & b e e e b a b e
3. I e d c e f b , f e a e e c & e e c a t a .
4. F d e e e e d , a e e e a f e e a b e a d b e a d b e c d e d e .

Calcium

1. I t e e e e e a e e (e e a d b e d e e e e b a b e) & c c a e e (e d c e f t e e e e

Discussion

Role of sodium, potassium, magnesium & calcium

Sodium

1. I a a a a b a a c e f d a d e a e b d
2. I e e d e e e f e e e a e b a b e
3. M e e f d a e d e e e e e c e a d e e e a d a .

Potassium

1. I a a a M c e c c a e e e b a a c e , t a f e a .

Table 2: Hyponatremia induced preeclampsia.

Electrolytes imbalance	Causes	Mechanism
Hyponatremia	Water and electrolytes imbalance	Increased sensitivity of vasopressor substances like aldosterone decreased cyclic GMP endothelin and PGE2 leads to sodium retention and potassium depletion
Hypokalaemia	Vomiting, diarrhoea, excess you use for diuretics	Increased sensitivity of aldosterone leads to potassium depletion
Hypocalcaemia	Hypoparathyroidism	Disrupted calcium homeostasis can lead to altered vasoconstriction and decreased intracellular calcium in smooth muscle cells resulting increased sensitivity of angiotensin-II leads to vasoconstriction and hypertension
	Other causes	
Hypomagnesaemia	Little intake of magnesium	Increased sensitivity of TRPM6 at 12 weeks gestation leads to magnesium depletion.
	Excessive loss of magnesium through kidneys and gastrointestinal tract	
	Mutations of TRPM6 genes	

Table 3: General treatments include Anti-Hypertensive, Anti-Convulsant & Corticosteroids to patients.

Symptoms	Treatment
Increased BP	Hydralazine (increased risk of maternal hypotension)
	Labetalol
	Nicardipine
	Sodium nitroprusside (emergency condition, but cyanide crosses placenta fatal toxicity)
Proteinuria	Eat less protein
	Decreased salt intake
	Physical exercise
	Regularly checking blood sugar & GFR blood tests
Thrombocytopenia	Platelet Transfusion
Increased liver enzymes	Ursodeoxycholic acid (15mg/kg/day)
Severe headache	Practise good sitting posture
	Some amount of rest & relax
	Eat well balanced diet
	Ice pack on head
	Drink plenty of water
Get enough sleep	
Shortness of breath	Nasal saline sprays/ prescription nasal steroids
	Practising good posture
	Sleeping with pillows and supporting the upper back
	Practising breathing technique
Nausea & vomiting	Anti-emetics drugs
Edema particularly in your face & hands	Avoid standing for long periods
	Wear comfortable shoes and socks
	Try to rest with your feet up
	Drink plenty of water
	Decreased salt intake
	Anti-diuretics drugs

Changes in vision	Start eating healthy foods
	Regular exercise
	Get enough sleep, rest to eyes
	Lubricating drops
	It improves after giving birth

1. Start eating healthy foods
2. Regular exercise
3. Get enough sleep, rest to eyes
4. Lubricating drops
5. It improves after giving birth

Mechanism

Hyponatremia is a common electrolyte imbalance in preeclampsia. It is caused by water and electrolyte imbalance. The mechanism involves increased sensitivity of vasopressor substances like aldosterone, decreased cyclic GMP, endothelin, and PGE2, leading to sodium retention and potassium depletion. Hypokalaemia is caused by vomiting, diarrhoea, and excessive use of diuretics. Hypocalcaemia is caused by hypoparathyroidism or other causes. Hypomagnesaemia is caused by little intake of magnesium, excessive loss through kidneys and the gastrointestinal tract, or mutations of TRPM6 genes. Increased sensitivity of TRPM6 at 12 weeks gestation leads to magnesium depletion.

Pharmacotherapy

(i) Non-pharmacological therapy

1. Start eating healthy foods
2. Regular exercise
3. Get enough sleep, rest to eyes
4. Lubricating drops

5. Ee a e , f e e d , e d a e e a , e
6. A d a c , c a - e , e e c ,

Pharmacological therapy

Ge e a e e , c d e A -H e e e , A -C a . & C c e d a e [13]. M a e , c a e c . c e e c a t a c a e a a e e a a e - e c . b c a a e a e e a d a c c e - e c . a e - I I a d e d e - I f e a c a c a e e e [13]. A c c d . F D A c a f d . e c a e - A , B , C a e e , c e e c a t a a e e D & X a e a d e d d . [T a b e 3].

Conclusion

H e a e a , H a a e a , H c a c a e a & H a e e a a e a e e c . e b a a c e c e e c a t a c d . [14]. C a a . f e e e c . e d b e d e c e e c a a a e [15]. S , e e e a e a , c a c , a e a d c . e c . d d e . d e e a e . f e e c a t a [16].

References

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